**QUESTION－－**

QUESTION:- Write a C programme to evaluate , taking 6 equal sub-intervals using Simpson’s rule, correct up to six decimal places.

Answer:- input

#include<stdio.h>

#include<math.h>

double f(double x){

return (1/(1+x\*x));

}

main(){

int n,i;

double a,b,h,x,sum=0,integral;

printf("\nEnter the no. of sub-intervals(EVEN): ");

scanf("%d",&n);

printf("\nEnter the initial limit: ");

scanf("%lf",&a);

printf("\nEnter the final limit: ");

scanf("%lf",&b);

h=fabs(b-a)/n;

for(i=1;i<n;i++){

x=a+i\*h;

if(i%2==0){

sum=sum+2\*f(x);

}

else{

sum=sum+4\*f(x);

}

}

integral=(h/3)\*(f(a)+f(b)+sum);

printf("\nThe integral is: %lf\n",integral);

}

Output:-

Enter the no. of sub-intervals(EVEN): 6

Enter the initial limit: 0

Enter the final limit: 1

The integral is: 0.785398